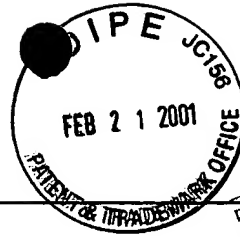


PRELIMINARY AMENDMENT

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C3 forming a metal layer on the polysilicon structure; and  
heating the metal layer and the polysilicon structure.

12. (Amended) A method of making an emitter contact for a bipolar transistor, the method comprising:

C4 forming a polysilicon structure on an active region of the transistor, the polysilicon structure including:

a diffusion barrier layer on the active region; and

a polysilicon layer on the diffusion barrier layer; and

[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon layer.

C5 15. (Amended) The method of claim 12 wherein [substituting] cross-diffusing metal [for] and the polysilicon layer comprises [substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer.

16. (Amended) The method of claim 12 wherein [substituting] cross-diffusing metal [for] and at least a portion of the second polysilicon layer, comprises:

depositing metal on the polysilicon layer; and

heating the deposited metal and the polysilicon layer.

20. (Amended) A method of making a metal contact for a bipolar transistor, the method comprising:

C6 forming a conductive diffusion barrier over an emitter region position of the transistor;

forming a polysilicon structure on the conductive diffusion barrier; and

[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon structure to form a metal contact having a lower-most surface overlying the emitter region position of the transistor.

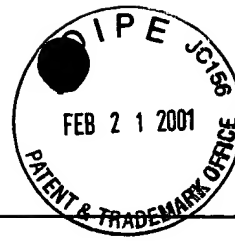
C7 23. (Amended) A method of making a bipolar transistor having self-aligned base contacts and self-aligned metal emitter contact, the method comprising:

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C7

forming first and second polysilicon base contacts on a semiconductive layer, the contacts spaced apart to define an active region in the semiconductive layer;  
outdiffusing dopant from the first and second base contacts into the semiconductive layer to form extrinsic base regions aligned with the base contacts;  
implanting an intrinsic base region in the active region;  
forming a doped diffusion barrier layer on the intrinsic base region;  
forming a doped polysilicon layer on the doped diffusion barrier layer;  
forming an emitter region self-aligned with the doped diffusion barrier layer by outdiffusing dopant from the doped diffusion barrier layer into the intrinsic base region; and  
[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon layer after forming the emitter region, thereby forming a metal emitter contact self-aligned with the emitter region.

24. (Amended) The method of claim 23:  
wherein [substituting] cross-diffusing metal [for] and at least a portion of the polysilicon structure includes [substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer.

C8

26. (Amended) The method of claim 24 wherein [substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer comprises:  
depositing metal on the polysilicon layer; and  
heating at least the deposited metal and the polysilicon layer to a predetermined temperature.

28. (Amended) A method of reducing emitter resistance of a bipolar transistor, the method comprising:

C9

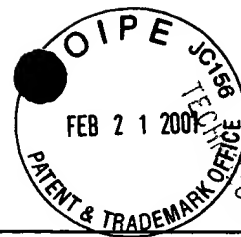
forming a bipolar transistor structure having a polysilicon emitter contact electrically coupled to an emitter region of the transistor structure;  
[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon emitter

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contact [without shorting the emitter region of the transistor].

32. (Amended) A method of making a bipolar transistor having self-aligned base contacts and self-aligned metal emitter contact, the method comprising:

forming first and second polysilicon base contacts on a semiconductive layer, the contacts spaced apart to define an active region in the semiconductive layer;  
outdiffusing dopant from the first and second base contacts into the semiconductive layer to form extrinsic base regions aligned with the base contacts;  
implanting an intrinsic base region in the active region;  
forming a doped polysilicon structure on the intrinsic base region, wherein the polysilicon structure includes:  
a doped diffusion barrier layer on the intrinsic base region; and  
a polysilicon layer on the doped diffusion barrier layer; and  
forming an emitter region self-aligned with the doped polysilicon structure by outdiffusing dopant from the doped polysilicon structure into the intrinsic base region; and  
[substituting] cross-diffusing metal [for] and substantially all of the polysilicon layer after forming the emitter region, thereby forming a metal emitter contact self-aligned with the emitter region.

33. (Amended) A method of making a metal emitter contact for an emitter region position of a bipolar transistor, the method comprising:

forming a diffusion barrier layer over the emitter region position of a semiconductive substrate;  
forming a polysilicon layer on the diffusion barrier layer and over the emitter region position; and  
[substituting] cross-diffusing metal [for] and at least a portion of the polysilicon layer to produce the metal emitter contact, the metal emitter contact electrically coupled to the emitter region through the diffusion barrier layer.

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C11  
35. (Amended) A method of making an emitter contact for an emitter region position of a bipolar transistor, the method comprising:

forming a polysilicon structure over an emitter region position of a semiconductive substrate, the substrate having a surface at the emitter region position; and  
[substituting] ~~cross-diffusing~~ metal [for] and at least a portion of the polysilicon structure to produce a metal emitter contact have a surface confronting the surface of the substrate.

C12  
39. (Amended) A method of making an emitter contact for an emitter region of a bipolar transistor, the method comprising:

forming a polysilicon structure on over an emitter region position; and  
[substituting] ~~cross-diffusing~~ metal [for] and at least a portion of the polysilicon structure to produce a metal contact, the metal contact not serving as contact to a base region of the bipolar transistor.